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ABSTRACT

This state-of-the-art paper and its accompanying 42-item annotated bibliography are on classroom observation systems in preparing school personnel. The paper is divided into four parts: (1) Introduction; (2) Description of Selected Classroom Observation Systems; (3) Use of Classroom Observation Systems in the Preparation of School Personnel; and (4) Summary and Conclusions. Part 2, the most detailed section, describes the more important classroom observation systems (i.e., "organized and systematic attempts to assess and quantify through observation the behaviors of teachers and students engaged in the teaching-learning process"). These systems are grouped in three categories: affective systems (those concerned primarily with the emotional climate of the classroom); cognitive systems (those concerned primarily with intellectual activities which result in the improvement of cognitive processes and skills); and multidimensional systems (those which attempt to assess both the affective and cognitive domains). Among the conclusions suggested by this comparative study are that classroom observation systems (of which the affective ones have been most widely used) can be used profitably in conjunction with microteaching, role playing, and other preservice laboratory teaching experiences; that, through their emphasis on teaching behaviors and indirect teacher influence, they have contributed to a greater emphasis on laboratory experience in teacher preparation and to an increasing "humanization" of teaching. (JES)

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CLASSROOM OBSERVATION SYSTEMS IN PREPARING SCHOOL PERSONNEL

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Preface

This state-of-the-art paper and its accompanying bibliography are on classroom observation systems in preparing school personnel. The authors, J. T. Sandefur and Alex A. Bressler, have been very active in writing and research on the subject, and the Clearinghouse is pleased that they have contributed their expertise to the ERIC system.

The bibliography is a valuable source of information for those interested in observation systems and should help readers in their continuing efforts to keep abreast of this important topic.

In the bibliography "ED" or order numbers and prices are included with those citations which have been processed into the ERIC system. The documents with such numbers may be ordered from the ERIC Document Reproduction Service, 4936 Fairmont Avenue, Bethesda, Md. 20014.

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Classroom Observation Systems in Preparing School Personnel

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PART I: INTRODUCTION

The Case for Observation Systems in Evaluating Teacher Effectiveness

The evaluation of teacher effectiveness has been perhaps the most difficult of all problems faced by the education community. The diverse opinions of authorities as to what constitutes effective teaching has unquestionably retarded and restricted the development of tools designed for uniform assessment of teaching behavior.

A major dimension of the problem revolves around the number of different philosophic and psychological theories of education in the United States. Each new theory has been accompanied by a supportive methodology which has been added to those already in existence rather than as a replacement for one of them. As a result, practitioners have had an almost infinite number of unvalidated theories from which to choose models for their teaching behaviors. It is not surprising, therefore, that teaching has been characterized, not by conformity of method, but by lack of conformity.

One may assume, for example, that the teacher who believes that "teaching is telling" would rely far more heavily upon lecture as a teaching technique than would the teacher who believes that "teaching is involving students in solving problems." By the same token, the teacher who subscribes to a mechanistic theory of learning would be more likely to present instruction in manageable segments designed to produce factual learnings than would the teacher whose instructional objectives are to develop broad insights and understandings on a cognitive basis.

Until recently, no generally acceptable system has existed for the study of teaching behavior. As a consequence, the teaching profession has lacked even a uniform terminology to describe teaching, and the evaluation and study of teaching has depended primarily upon the value judgments of the observer. With the advent of classroom observation systems, particularly systems of classroom interaction analysis, tools have been made available to the education community for the study and assessment of teaching.

The acceptance of classroom observation systems as a tool for researchers in the evaluation of teaching effectiveness has been quite evident. The incorporation of observation systems into programs for the preparation of school personnel, however, has developed much more slowly.

The major purpose of this paper is to discuss the use of observation systems in the preparation of school personnel. Therefore, it is necessary to describe the more important observation systems in some detail. Part II of this paper presents a description of classroom observation systems in three categories: 1. affective systems, 2. cognitive systems, and 3. multidimensional systems. Part III of the paper discusses the use of observational systems in the preparation of school personnel, and Part IV presents a summary and conclusion.

Definition of Terms

The following definitions of terms have been made:

1. Effective Teaching. For the purposes of this paper, effective teaching has been defined as the development of a relationship between the teacher and the student which leads the student to an optimal acquisition of the instructional objectives, e.g., the development of understandings, insights, concepts, attitudes, and the assimilation of factual content.
2. Classroom Observation System. An organized and systematic attempt to assess and quantify through observation the behaviors of teachers and students engaged in the teaching-learning process.
3. Affective Systems. Those observation systems which are concerned primarily with the emotional climate of the classroom.
4. Cognitive Systems. Those observational systems which are conconcerned primarily with intellectual activities which result in the improvement of cognitive processes and skills.
5. Multidimensional Systems. Those systems which attempt to assess both the affective and cognitive domains through the observation of classroom behaviors.
6. Preparation of School Personnel. Those programs at both the undergraduate and graduate level which prepare elementary and secondary teachers, administrators, counselors, and other specialized teaching personnel.

PART II: A DESCRIPTION OF SELECTED CLASSROOM OBSERVATION SYSTEMS

Direct Observation in Research on Teaching

Medley and Mitzel state in the Handbook of Research on Teaching that the true role of direct observation in research on teacher effectiveness must be one in which there is some attempt made to comprehend the nature

of effective teaching.[1] The following analysis or survey of classroom observation systems is based upon the supposition that there are numerous ideas and definitions concerning effective teaching. Effective teaching has been defined in Part I, as have the terms affective, cognitive, and multidimensional as they relate to classroom observation systems. Knowing the difficulties one encounters when tacking labels on people, institutions, and systems, the authors have attempted to place classroom observational systems within the definitions of affective, cognitive, and multidimensional. M. Karl Openshaw and other reviewers have set a precedent for this action.[2]

The authors have summarized some of the major accomplishments in the rapidly expanding field of classroom observational systems. There was no intention to slight anyone or any system, but the purpose of this review is to relate the state of the art of classroom observational systems that aid in teacher education. All systems were developed primarily for research purposes, but some are suited for aiding in the training of classroom teachers and for the rating of inservice teachers. As the introduction indicates, some systems are designed for action research evaluation and are not necessarily directed toward classroom observation devices for feedback usage in teacher education.

Since affectively oriented classroom observation systems appear to be the most numerous, this survey has begun with affective systems.

Withall, Bales, Flanders, Hughes, and Amidon may be viewed as pioneers of the new emphasis on classroom observation.

Affective Systems

Early Work. The greatest influence on the direction of the development of category systems which measure the affective climate of the classroom has been the work of H. H. Anderson. Anderson developed and

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[1]Donald M. Medley and Harold E. Mitzel, "Measuring Classroom Behavior by Systematic Observation," Handbook of Research on Teaching, N. L. Cage, editor (Chicago: Rand McNally & Co., 1963), p. 249.

[2]M. Karl Openshaw and Frederick R. Cyphert, The Development of a Taxonomy for the Classification of Teacher Classroom Behavior, Ohio State University Research Foundation, Project No. 2288 (Columbus: the Foundation, 1966).

used a category system which revealed that the way teachers behave in the classroom does affect the way pupils behave. Anderson divided teacher behaviors into dominative versus integrative behaviors, and this concept influenced the work of Withall, Joyce, Flanders, and others whose observational systems are closely linked to Flanders. [3] Integrative behavior was that which expanded the children's opportunities for self-directive and cooperative behavior with the teacher and their peers; dominative behavior tended to restrict children's activities and to lead to distracted, aggressive, non-cooperative conduct.[4]

Anderson based his findings on a study of preschool and elementary school classrooms that involved five teachers. His research led to several important findings. The first was that the dominative and integrative contacts of the teacher set a pattern of behavior that diffused throughout the classroom climate. The second finding showed that if a teacher promoted integrative contacts, the students showed more acts of problem solving, became more voluntary in their actions, and showed more spontaneity and initiative. Thirdly, the dominative teacher had pupils who were more easily distracted from schoolwork, whether complying with teacher domination or rejecting it.[5]

In 1949 John Withall developed a classroom observation system in which each teacher statement was classified into seven categories according to inferred intent. This simple classification of the teacher's verbal statements proved to be almost identical to the integrative-dominative ratio of Anderson and others.[6] The Withall System or Social-Emotional Climate Index is basically affective except that it includes categories which differentiate problem-structuring statements or questions from neutral statements.

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[3]Anita Simon and E. Gil Boyer, editors, Mirrors for Behavior: An Anthology of Classroom Observational Instruments, I (Philadelphia: Research for Better Schools and The Center for the Study of Teaching, 1967), p. 3.

[4]John Withall, "The Development of a Technique for the Measurement of Social-Emotional Climate in the Classroom," Journal of Experimental Education 3: 347-61; March 1949.

[5]N. A. Flanders, Teacher Influence, Pupil Attitudes, and Achievement, Cooperative Research Monograph, No. 12 (Washington, D. C.: Government Printing Office, 1965), p. 4.

[6]Ibid., p. 5.

Withall defines social-emotional climate by declaring that:

> Climate is considered in this study to represent the emotional tone which is a concomitant of interpersonal interaction. It is a general emotional factor which appears to be present in interactions occurring between individuals in face-to-face groups. It seems to have some relationship to the degree of acceptance expressed by members of a group regarding each other's needs or goals. Operationally defined it is considered to influence: 1. the inner private world of each individual, 2. the esprit de corps of a group, 3. the sense of meaningfulness of group and individual goals and activities, 4. the objectivity with which a problem is attacked, and 5. the kind and extent of interpersonal interaction in a group.[7]

An analysis of teachers' verbal behavior led to the development of seven categories of statements which teachers utilized in classrooms.

1. Learner-supportive statements that have the intent of reassuring or commending the pupil.
2. Accepting and clarifying statements that have the intent of conveying to the pupil the feeling that he was understood and helping him elucidate his ideas and feelings.
3. Problem-structuring statements or questions which proffer information or raise questions about the problem in an objective manner with one intent of facilitating the learner's problem solving.
4. Neutral statements which comprise polite formalities, administrative comments, verbatim repetition of something that has already been said. No intent inferable.
5. Directive or hortative statements with the intent of having pupils follow a recommended course of action.
6. Reproving or deprecating remarks intended to deter pupils from continued indulgence in present "unacceptable" behavior.
7. Teacher self-supporting remarks, intended to sustain or justify the teacher's position or course of action.[8]

The first three categories were said to be learner-centered. The latter three were teacher-centered, with the neutral category having no influence on either of the other two.[9]

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[7]Withall, op. cit., p. 350.

[8]Ibid., p. 351.

[9]Ibid., p. 352.

By analyzing teacher statements according to these seven categories, an observer can tell whether a teacher is learner-centered or teacher-centered. Once the seven categories were identified the next step was to ascertain the objectivity, reliability, and validity of the technique. Withall claimed to have developed a technique for assessing the social-emotional climate in the classroom by categorizing teacher statements contained in typescripts made from sound recordings of class sessions. He concluded that classroom climate can be evaluated and described and that teacher statements, when categorized, were valid measures of the social-emotional climate of groups. The climate index was able to present a consistent pattern of verbal behavior. Statements categorized as having positive or negative feelings tended to be reacted to positively and negatively by individuals to whom they were addressed.[10]

Flanders System of Interaction Analysis. While Withall was involved with categorizing teacher talk, he did not introduce the term interaction, meaning verbal interaction between teacher and pupil. Classroom interaction analysis is most interested in teacher talk, but it also provides for student talk. Ned Flanders is a major figure in the development of interaction analysis, and it is an important system under the affectively oriented classification. Flanders has written that:

> Classroom interaction analysis is particularly concerned with the the influence pattern of the teacher. . . . Our purpose is to record a series of acts in terms of predetermined concepts. The concepts in this case refer to the teacher's control of the students' freedom of action. Our interest is to distinguish those acts of the teacher that increase the students' freedom of action, from those acts of the teacher that decrease the students' freedom of action and to keep a record of both. . . . .
>
> Interaction analysis is concerned primarily with verbal behavior because to can be observed with higher reliability than most nonverbal behavior.[11]

The Flanders System of Interaction Analysis is probably the best known and most widely used classroom observation system in existence. It is simple enough to be easily understood, and it can be learned in twelve to twenty hours. It is presently used by teachers, supervisors, counselors and anyone else who wants to change his pattern of interacting. The Flanders system is easily adaptable for use in research and as an instructional tool to provide feedback in teacher training. It has been utilized, adapted, and expanded by others devoted to classroom observation tion, namely, Amidon, Hough, and Fuller.

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[10] Ibid., p. 313.

[11] Flanders, op. cit., p. 3.

The Flanders system has only ten categories: seven are for teacher verbal behavior, two are for pupil talk, and one is to denote silence or noise.[12]

The teacher talk categories are divided into two sections. Four are considered to exert indirect influence on classroom climate and three exert direct influence:

Indirect Influence Categories
1. Accepts pupil's feeling
2. Praises or encourages pupil
3. Accepts or uses pupil's ideas
4. Asks questions

Direct Influence Categories
5. Lectures
6. Gives directions
7. Criticizes or justifies authority[13]

Indirect influence encourages the student to participate in classroom discussion, which gives him more freedom to commit himself. When the teacher asks a question, a student is invited to form his own ideas and express his own opinions or facts. The teacher should keep questions general enough to provide the student with the opportunity to formulate an answer. When the teacher uses a student's ideas or accepts an answer and praises him, he encourages the pupil to participate freely.

Direct influence tends to inhibit student initiative and promote compliance. When the teacher lectures, he keeps the students focused on him and his own ideas. The restriction of student freedom through direct teacher influence--lecturing, criticizing, justifying authority, or giving direction--results in less student freedom to act. Direct teacher influence is provided for in category number eight, which is student response to the teacher. This is often a narrow response to a specific question. It is usually an answer with the teacher in mind. Indirect influence may stimulate student-initiated talk in which his own ideas or

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[12]Ned A. Flanders, "Some Relationships Among Teacher Influence, Pupil Attitudes, and Achievement," Contemporary Research on Teacher Effectiveness, B. J. Biddle and William J. Ellena, editors (New York City: Holt, Rinehart & Winston, 1964), p. 197.

[13]Anita Simon and E. Gil Boyer, Technical Tools for Teaching (Philadelphia: Research for Better Schools, 1968), pp. 13-14.

questions may be expressed. This is called a broad response by Flanders.[14]

Category ten is for silence, short pauses, and moments of confusion that often occur in classroom interaction.

This system of interaction was designed for class periods in which the students and the teacher are involved in discussing school work.

The Flanders system is coded by the numbers of the ten categories. These numbers, according to the classroom situation, are recorded every three seconds by a trained observer. All he needs to write down is the number of the category that is occurring during a specific period of classroom interaction. A number must be written down whether the category changes or not. In this way the observer will have a record which will allow him to infer the classroom climate and to describe the teaching style.[15]

When the record is compiled, an observer may read down the column and get an idea of the sequence of verbal action that occurred during the time period that is allotted for observation. It is somewhat difficult to obtain a total pattern of a teacher's verbal behavior from the columns of figures. Therefore, a grid or matrix is utilized to reveal patterns of teacher-student interaction. It may reveal the pattern of methods that a teacher uses with his class. The matrix may give a basis for determining the structure of the classroom when it provides information about student talk. The matrix may also inform the observer how the teacher reinforces different student behaviors and how the teacher involves his pupils in discussion.[16]

The matrix for the Flanders system is made up of one hundred cells--ten cells in ten rows. Two Flanders behaviors are represented in each cell; each tally in the cell represents a behavior pair. One half of the pair is one of the Flanders categories; the other half is another category. For example, when a teacher responds to a student idea (9) with praise (2), cell 9-2 receives a tally.[17]

The basic Flanders system has proved to be a popular tool which others have utilized in their own research and in building programs to advance teacher education.

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[14]Simon and Boyer, Technical Tools, p. 14; see also Flanders, "Some Relationships," pp. 18-19.

[15]Flanders, "Some Relationships," p. 20.

[16]Simon and Boyer, Technical Tools, pp. 20-21.

[17]Ibid., p. 2.

An Introduction to the Use of the Coping Analysis Schedule for Education Settings (CASES). Robert L. Spaulding states that there has been a problem in educational research that concerns the measurement of teacher-pupil transactions in classroom situations. His affectively oriented Coping Analysis Schedule for Educational Settings (CASES) was developed over a period of six years and involved about one thousand case studies in ongoing classrooms. CASES is used to observe the overt behavior, both verbal and nonverbal, of children in the classroom and in other school settings. It consists of thirteen categories of "coping" behaviors which are categorized on the basis of descriptive statements. These thirteen categories are as follows: 1. aggressive behavior; 2. negative (inappropriate) attention-getting behavior; 3. manipulating and directing others; 4. resisting atuhority; 5. self-directed activity; 6. paying rapt attention; 7. sharing and helping; 8. social interaction; 9. seeking support, assistance, and information; 10. following direction passively and submissively; 11. observing passively; 12. responding to internal stimuli; 13. physical withdrawal or avoidance.[18] The more active coping categories are grouped first; the more passive, last. The integrative and dominative behaviors as shown in the work of H. H. Anderson are part of the psychological dimensions used in the development of this schedule.[19]

CASES has been used in research and teacher training and by supervisors of teachers. Once teachers learn CASES they can diagnose child behavior and begin to bring about necessary changes in that behavior.

Verbal Interaction Category System (VICS). The Flanders System of Interaction Analysis is closely related to the Verbal Interaction Category System (VICS) of Edmund Amidon and Elizabeth Hunter. Amidon and Hunter simply expanded the Flanders system to provide more detailed information. Their system which is affectively oriented, is used when the verbal communication of teacher and students is being observed; it is used in research, teacher training, and supervision. VICS contains five major categories for analyzing classroom verbal behavior: teacher-initiated talk, teacher response, pupil response, pupil-initiated talk, and other.[20] Like the Flanders system the categories of verbal

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[18]Robert L. Spaulding, An Introduction to the Use of the Coping Analysis Schedule for Educational Settings (CASES) (Durham, North Carolina: Education Improvement Program, Duke University, 1967), pp. 1-3.

[19]Ibid, p. 3.

[20]Edmund Amidon and Elizabeth Hunter, Improving Teaching: Analyzing Verbal Interaction in the Classroom (New York City: Holt, Rinehart and Winston, 1966), pp. 209-22.

behaviors must be memorized. Once they are learned the response in tallying is automatic.

The following four categories explain teacher-initiated talk:

1. Gives Information or Opinion. This category is marked (recorded) when the teacher gives opinions or facts to the class in lecture form or in brief statements. This category is for explanation, orientation, or the presentation of content.
2. Asks Narrow Questions. If a specific response to a question is sought and if this can be detected, this category may be used. This category includes narrow questions.
3. Asks Broad Questions. This category is for questions that may have no specific answer and that generally call for unpredictable responses. These questions may be thought-provoking and require reasoning or an expression of opinion.
4. Gives Directions. The teacher tells the pupil to take some specific action.

There are two categories for teachers' response:

5. Teacher Acceptance. The teacher accepts the ideas, behavior, and feelings of the student.
6. Teacher Rejection. The teacher reacts negatively to pupil's ideas, behavior, and feelings.

The remaining categories are:

7. Pupil Response. The pupil responds to the teacher either predictably or unpredictably, or the pupil responds to another pupil.
8. Pupil-Initiated Talk. The student talks either to the teacher or another student without solicitation.
9. Other. This category is for silence or confusion.[21]

As in the Flanders system a matrix is used to plot the amount, sequence, and pattern of verbal behavior in the classroom. It can be determined from the matrix what kinds of behavior followed other kinds of behavior. Recurring patterns of behavior may also be seen.[22] VICS gives teachers, supervisors, and future teachers a tool to provide objective data on classroom behavior and feedback for growth and change.[23]

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[21] Ibid., pp. 1-7.

[22] Ibid., pp. 7-11.

[23] Ibid., p. 12.

Development of the Means for the Assessment of the Quality of Teaching in Elementary Schools. Marie M. Hughes (1959) experimented with the goal of gaining knowledge about the actions of a teacher in an elementary school classroom.[24] The Hughes system, affectively oriented, is both a verbal and a nonverbal record of communication. The method of collecting data may be either live or tape-recorded. Hughes used her system for research work; later it was adapted for use in training student observers in elementary school classroom.[25]

She and her associates developed a comprehensive set of categories in which to classify teacher behavior. There was much similarity to Withall's categories except that Hughes' categories were not restricted to verbal behavior. Seven major categories are:

1. Functions That Control
2. Functions of Imposition of a Teacher
3. Functions That Facilitate
4. Functions That Serve as Personal Response
5. Function of Positive Affectivity
6. Functions That Develop Content by Response
7. Functions of Negative Affectivity[26]

The system shows Marie Hughes' interest in group processes in which the leader is the primary agent for setting group climate and for determining where the power within the classroom should reside. The point of greatest emphasis is providing the best learning environment for the group.

After experimenting with her system, Hughes concluded that a "teacher's behavior patterns are stable through time."[27] The finding was similar for all seven categories, but it differs with findings of other investigators

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[24]Marie M. Hughes, Development of the Means for the Assessment of the Quality of Teaching in Elementary Schools (Salt Lake City: University of Utah Press, 1959).

[25]Simon and Boyer, editors, Mirrors for Behavior, I; see also Hughes, Development of the Means, p. 3; and Robert Gilstrap, The Teacher in Action, A Guide for Student Observers in Elementary School Classrooms (Provo, Utah: Provo City Schools, 1961).

[26]Medley and Mitzel, "Measuring Classroom Behavior," pp. 267-70.

[27]Ibid., p. 271.

(Medley and Mitzel, Mitzel and Rabinowitz) who found significant variability. The Hughes data was derived from a too limited sample and thus has been found to be not overly objective.[28]

Cognitive Systems

The Language of the Classroom. The Bellack system is an analysis into linguistic behavior and is therefore cognitive. It is verbal in that it is primarily concerned with the kinds of meanings that are transmitted between teachers and learners. Tape recordings and tapescripts are used as means of data collection.[29]

The speaker is recorded and coded, whether he is the teacher or pupil. The code identifies whether the speaker is 1. structuring (focusing attention on a topic), 2. soliciting, 3. responding to a solicitation, or 4. reacting to a response. The code also identifies "substantive" meaning, i.e., what the student or teacher is talking about, and the "substantive logical" process--defining, stating facts, explaining, justifying, etc. To determine how much the teacher and how much the students talk, the sum of the number of lines on the tapescript is counted. Or the area of classroom management can be investigated by counting the number of lines of discourse spent on classroom management.[30]

Bellack used his rules in investigating high school teaching and found that there were cycles in teaching that were consistent in each classroom. This finding he contrasted with a game which teacher and pupils were playing according to explicit rules. Examples of these rules indicate that the pupil does not make regulations. He structures less than he solicits, reacts, or responds; he does not often take the initiative in the classroom. Therefore, the teacher structures, asks the questions, and reacts to the pupils' answers. Bellack's basic cycles of "solicitation followed by response followed by reaction" accounted for 48 percent of all teaching cycles.[31]

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[28] Ibid., p. 271.

[29] Simon and Boyer, editors, Mirrors for Behavior, I; see also Arno A. Bellack and others, The Language of the Classroom (New York City: Teachers College Press, Columbia University, 1966), pp. 3-4.

[30] Bellack, The Language, pp. 4-6.

[31] Ibid., p. 204.

These teaching cycles, which occur consistently and indicate a lack of teaching excellence, Bellack hopes can be changed. The rules of the game need to be broken to contribute to a teaching climate in which the teacher is not the most active class member and in which students initiate questions and react to them.[32]

A Study of the Logic and the Strategies of Teaching. In 1959 Smith and Meux and their collaborators began to consider the logical aspects of teaching behavior and to determine a logical structure for teaching subject matter. This system, A Study in the Logic of Teaching,[33] and its corollary, A Study of the Strategies of Teaching,[34] are in the cognitive category. They include the basic ideas that instruction is essentially logical and that identification and descriptions of the various components of teaching behavior must be derived before investigators can determine basic concepts and principles.[35]

The major purpose of the Study of the Logic of Teaching was to develop a means of dividing verbal behaviors of the student and teacher into pedagogical units to be analyzed.[36] Tape recordings were made of teacher-student interaction which were later coded by two teams of two observers each. The coding units in the Study of the Logic of Teaching are:

1. Episodes, defined as one or more exchanges which comprise a completed verbal transaction between two or more speakers. A new episode is determined by a shift in what the speakers are talking about, which may be a new aspect, or part of a topic, or a complete change of topic.
2. Monologues, defined as a solo performance of a speaker addressing a group. Both are coded, but only episodes are analyzed in this system.[37]

The episode is classified into categories that refer to the ideal response required by the verbal behavior. These categories are: 1. defining, 2. describing, 3. designating, 4. stating, 5. reporting, 6. sub-

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[32]Ibid., p. 221.

[33]B. O. Smith and M. O. Meux, A Study of the Logic of Teaching (Urbana: Bureau of Educational Research, College of Education, University of Illinois, 1967).

[34]Smith, B. O., and others. A Study of the Strategies of Teaching. (Urbana: Bureau of Educational Research, University of Illinois, 1967).

[35]Openshaw and Cyphert, The Development of a Taxonomy, pp. 23-25.

[36]Ibid., p. 24.

[37]Simon and Boyer, editors, Mirrors for Behavior, I: see also Smith, A Study of the Logic, p. 3.

stituting, 7. evaluating, 8. opining, 9. classifying, 10. comparing and contrasting, 11. conditional inferring, 12. explaning, and 13. directing and managing classroom.[38]

A more recent achievement of Smith and his associates--strategics--expands the previous research and presents a new verbal unit, the strategy, which is further clarified through the introduction of the venture and the move.

A strategy is a pattern which occurs in the verbal behavior of the classroom. Strategies are sets of verbal behaviors utilized as a means of attaining certain outcomes or content objectives: as such, they involve goals and the ways teachers act in achieving goals.[39]

A venture is a unit of classroom talk which consists of a set of utterances pertaining to one topic and one overall goal. There are nine different ventures, and a new venture is determined by a complete topic change. The venture is more inclusive than the episode-coding units of the Logic of Teaching system.[40]

Another unit of strategy is the move. The move is the logical relationship that is established between some event, thing, object, or term in the proposition disclosed by the venture in which the discourse occurs.[41]

"Smith and his associates have developed a framework and a set of concepts to describe and analyze classroom discourse associated with achieving content objectives."[42] This is the beginning step toward development of a theory of classroom instruction with a basis of a logical analysis of behavior.

Multidimensional Systems

The Spaulding Teacher Activity Rating Schedule (STARS). The Spaulding Teacher Activity Rating Schedule (STARS) is designed to view teachers as they seek to bring about change in the behavior of their pupils. The

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[38] Smith, A Study of the Logic, pp. 35-41.

[39] Ibid., p. 35.

[40] Ibid., p. 5.

[41] Simon and Boyer, editors, Mirrors for Behavior, I; see also Smith, A Study of the Logic, p. 3.

[42] Openshaw and Cyphert, The Development of a Taxonomy, p. 26.

instrument is a multidimensional observational system, designed for observation in three major areas in which change is desired--cognitive, social, or motor. Under each area are listed the specific techniques that are used by the teacher to obtain student responses.[43]

Spaulding conducted a comprehensive study that involved 113 categories of teacher-pupil transactions in twenty-one elementary classrooms. He found found that three types of teacher variables were linked with pupil performance and self-concept. They were:

1. Supportive, approving, and receptive teacher behaviors which operated as rewards.
2. Aversive or dominative teacher behaviors which had generally a punishing effect.
3. Limit- and goal-setting teacher behaviors which tended to clarify, regularize, organize, or further structure the environment for the benefit of pupil performance.[44]

STARS can be employed reliably in all types of classroom situations with a minimum amount of equipment and personnel. Behavior is coded as it happens, and data sheets can be easily summarized in tabular or graphic form.[45]

One major drawback to STARS is that it takes approximately two to three weeks to train observers, although once they are trained the reliability of observation is fairly high.[46]

STARS can be used by teachers to furnish feedback to change their patterns of instruction. STARS data sheets, when reviewed, may provide a positive effect on teaching.

Multidimensional Analysis of Classroom Interaction (MACI). This system is based on the Flanders' System of Interaction Analysis; it is a system of categories for coding and quantifying the classroom behaviors

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[43] Robert L. Spaulding, The Spaulding Teacher Activity Rating Schedule (STARS) (Durham, North Carolina: Education Improvement Program, Duke University, 1967).

[44] Ibid., p. 5.

[45] Ibid., p. 5.

[46] Ibid., p. 6.

of teachers and students.[47]

MACI contains two categories that deal with a teacher's reactions to and use of pupils' feelings. It also contains a category that provides the observer with a code to use when students talk with a level of feeling. This system expands Flanders categories of student behavior and separates a student's cognitive contribution from his affective contribution. There is a category for student hostility so that when the reader looks at the data he can tell whether the student is exhibiting "fight behavior" in the classroom. This category system also focuses on the teacher's means of involving students in the classroom and allows for determining whether students participate by being called on or whether the students volunteer to talk.[48]

Honigman made a study of the works of others and attempted to synthesize elements from various systems into a single category system. His affective and control categories are derived mainly from Flanders and Hughes and his cognitive orientation is based on work by Aschner and Gallagher.[49] This synthesis is balanced among the aspects of classroom verbal behavior (affective, control, and cognitive) by using only a single set of categories.[50]

Honigman's system was designed to meet the need for a classroom observational system that covered cognitive, affective, and control features of teacher influence in the classroom in a balanced way.

1. The Affective Dimension. The affective dimension of analysis focuses on the emotional climate or mood that pervades a classroom and on the teacher behaviors and student behaviors which directly and indirectly create, communicate, and maintain this mood.

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[47] Fred K. Honigman, Multidimensional Analysis of Classroom Interaction The Honigman System of Interaction Analysis (Villanova, Pennsylvania: Villanova University Press, 1967), p. 3.

[48] Simon and Boyer, editors, Mirrors for Behavior, I; see also Honigman, Multidimensional Analysis, p. 3.

[49] Mary Jane Aschner, James Gallagher, and others, A System for Classifying Thought Processes in the Context of Classroom Verbal Interaction (Urbana: Institute for Research on Exceptional Children, University of Illinois, 1965).

[50] Honigman, op. cit., pp. 35-40.

2. The Control Dimension. The control dimension broadly examines the nature of the teacher's regulation of his classroom. It provides commentary on classroom organization in general; in particular, on the amount of structure and direction imposed on student participation and the techniques that the teacher uses to establish and maintain this kind of control.

3. The Cognitive Dimension. The cognitive dimension focuses on the conceptual nature and level of content-focused activity in the classroom. It is concerned with analyzing the kinds of cognitive behaviors in which both the teacher and his student engage, particularly the techniques employed by the teacher in promoting the kind of student participation observed.[51]

Each of these dimensions is examined from three different frames of reference: the descriptive, analytic, and evaluative.

1. The descriptive component of analysis deals with information about the existing state-of-affairs in a classroom in terms of whatever dimension is being examined.

2. The analytic component of analysis serves to describe the way in which the observed state-of-affairs in each dimension was brought into being.

3. The evaluative component of analysis is directed toward making judgments about the adequacy, quality, or success of the teacher's and/or students' activities in the classroom, in relation to the particular dimension being examined.[52]

A twenty- to thirty-minute period of observation is recommended by Honigman. This system has been used for helping teachers improve their teaching in microteaching situations. It also has been used in research and inservice teacher training.[53]

Observation Schedule and Record (OScAR). Medley and Mitzel have been working more than ten years on an instrument known as the Observation Schedule and Record (OScAR), which is primarily a means by which to record quantitatively data concerning teacher behavior. OScAR began with the development of an observational technique to be used to evaluate the per-

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[51] Ibid., p. 31.

[52] Ibid., p. 32.

[53] Simon and Boyer, editors, Mirrors for Behavior, I; see also Honigman, Multidimensional Analysis, p. 3.

formance of beginning teachers who had graduated from the New York City Municipal College System.[54] It also began as an adaptation of the work of Cornell[55] and of Withall's Social-Emotional Climate Index. OScAR originally classified the emotional climate and social organization within the classroom; a verbal emphasis was later added to those dimensions. This emphasis, together with social structure and emotional climate, helped produce a more reliable measure of teacher behaviors.[56] OScAR has run through five adaptations since its development by Medley, Mitzel and others. OScAR 5-V is the latest of these adaptations.

OScAR 5-V is an eighteen-category schedule that has been designed to be used in direct observation of the behavior of teachers while they teach and while their students learn. It records only two sets of verbal behaviors: monologues and interchanges. The interchange is concerned only with teacher behavior, noting how the teacher begins interchange or interaction with a student, then noting how teacher responds to the student's answer.

This category system is multidimensional in that it has an effective, cognitive, and procedural dimension which shows the amount of time the teacher and students spend on matters other than classroom content.[57] The tasks of the coder, or classroom observer, using the observation system are as objective as the cues on which discriminations are made clear. The observer, who records the live behavior, does not have the amount of time necessary to think about each classroom action. He must put himself into the place of the students in the classroom. His main job is to record the teacher's verbal behavior since only four of the eighteen categories are related to the student. OScAR may be used by observers after limited amounts of training.[58]

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[54] Openshaw and Cyphert, The Development of a Taxonomy, p. 20.

[55] F. G. Cornell, C. M. Lindvall, and J. L. Saupe, An Exploration Measurement of Individualities of School and Classrooms (Urbana: Bureau of Educational Research, College of Education, University of Illinois, 1952).

[56] Openshaw and Cyphert, op. cit., p. 20.

[57] Simon and Boyer, editors, Mirrors for Behavior, I; see also Medley and Mitzel, "Measuring Classroom Behavior," p. 3.

[58] B. R. Smoot, "The Observation Schedule and Record (OScAR), A Language of Teaching," Texas Journal of Secondary Education 21: 22; Spring 1968.

B. R. Smoot claims that "the most important characteristic of this system is that the categories are descriptive rather than evaluative. Since OScAR 5-V is a system for measuring teaching behaviors, it is essential that the concepts of measurement and evaluation be understood.[59]

The primary value of OScAR 5-V is that it provides a language of teacher behavior. It provides a specific feedback concerning just how the teacher performed. It can show many teachers, who are not really aware, the behaviors and patterns of behavior that they use daily in the classroom. OScAR can provide an objective record and display of teaching behaviors as they occurred and a vehicle to modify behavior.[60]

Characteristics of Teachers 1960. David G. Ryans, in his work Characteristics of Teachers,[61] deals with relationships among estimates of teacher behavior patterns observed in the classroom; an inventory of estimated teacher characteristics, background, and environmental variables; and observed pupil behaviors.[62] Observers view and later record teacher-student reaction and interaction in the classroom environment. Ryans wished to classify observational data and relate to it other information about teachers in order to learn patterns of teacher characteristics in relation to conditions of teacher status. An effort was also made 1. to determine the kinds of information that could be used to distinguish between the high-evaluated and low-evaluated teacher and 2. to investigate the interactions and interrelationships among pupil behaviors and teacher behaviors.[63]

At the beginning of Ryans' study, a primary set of teacher traits was identified. This identification took place after extensive analysis of prior classroom research, after analysis of reported critical incidents, and after much trial and error involving classroom observation and assessment. An observation and assessment record and a glossary explaining the

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[59]Smoot, op. cit., p.22.

[60]Ibid., p. 27.

[61]David G. Ryan, Characteristics of Teachers: Their Description, Comparison, and Appraisal (Washington, D.C.: American Council on Education, 1960).

[62]David G. Ryans, "Research on Teacher Behavior in the Context of the Teacher Characteristics Study," Contemporary Research on Teacher Effectiveness, Bruce J. Biddle and William J. Ellena, editors (New York City: Holt, Rinehart, and Winston, 1964), p. 67.

[63]Ibid., pp. 70-71.

behaviors that were to be assessed were formed. The classroom observation record mentioned four dimensions of teacher behavior.[64]

Each teacher, observed by a trained observer using this record, was given a value that extended from one to seven on a scale. The extreme left of the scale signified "harsh" and the extreme right, "kindly" with regard to teacher behaviors.[65] Observers had to be carefully selected and well trained as much depended on the skill which they developed in accurately learning the procedure to use the record. Result also depended on the extent to which important aspects of behavior or situations were samples or were identified.

A year-and-a-half was devoted to developing classroom observation record, and the staff believed that this time and careful work paid dividends. The study was able to report that quite substantial intercorrelations between observers on different characteristics and on teacher-classroom behavior patterns that subsequently emerged. Reliability estimates were made of the assessments of the several dimensions of observed teacher behavior (for example, "harsh-kindly," "aloof-responsive," "stereotyped-original," "evading-responsible") based on correlations between the assessments by a first and second observer of the same teacher.[66]

Separate teacher characteristics schedules were developed and used. One was for elementary teachers, another was for English and social studies, and a third was for mathematics-science teachers. The use of these schedules made it possible to obtain a cross section of behaviors and characteristics.[67]

A Taxonomy for the Classification of Teacher Classroom Behavior. Many category systems of teacher behavior were analyzed by Cyphert and Openshaw in order to develop a synthesis of the systems for their own four-dimensional category system, which they termed as a taxonomy of teacher behavior.[68] This system may be classified as multidimensional because it is both affectively and cognitively oriented. Verbal and nonverbal types of communication are recorded. The subject of the observation is the teacher, and the methods of collecting data are both live and video-taped.

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[64] Ibid., p. 72.

[65] Ibid., p. 74.

[66] Ibid., p. 74.

[67] Ibid., p. 79.

[68] Openshaw and Cyphert, The Development of a Taxonomy.

The Taxonomy for the Classification of Teacher Classroom Behavior has been used in research but not for teacher training.[69]

After a review of most completed research in teacher behavior in this taxonomy, it was concluded that there were four major dimensions to teacher behavior: 1. a source dimension, 2. a direct dimension, 3. a function dimension, and 4. a sign dimension. "Each of these dimensions of teaching is observable and quantifiable, the analysis of which provides empirical data about what a teacher does; how he behaves while teaching."[70]

The source dimension attempts to determine where the behavior comes from--inside the classroom or outside. It indicates the relationships of the student and the teacher--their interaction at a basic level.[71]

The direct dimension of teaching might also be called the target of teaching. The receiver of the teaching must be identified and classified. The receivers may be an individual, a group within the class, the whole class, or an inanimate object.[72]

The function of teaching includes any behavior involved with teaching, implying that the purpose a given behavior serves determines function. One task of teaching is that which deals with subject matter or content--that which is to be taught. A second function is the act of maintaining interpersonal relations among those in the classroom in order that content may be taught. A third is to facilitate the learning process.[73]

The sign dimension or mode exists because behavior must be shown in some way to be observed. Thus, there is a need for determining the mode of communication between teacher and pupil.[74]

Openshaw and Cyphert began their synthesis of approaches to the de-

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[69]Simon and Boyer, editors, Mirrors for Behavior, I; see also Openshaw and Cyphert, The Development of a Taxonomy, pp. 2-3.

[70]Openshaw and Cyphert, The Development of a Taxonomy, pp. 44-45.

[71]Ibid., p. 45.

[72]Ibid., p. 46.

[73]Ibid., pp. 45-46.

[74]Ibid., p. 49.

scription and categorization of teacher classroom behavior, but they soon become frustrated with the overwhelming task and were forced to compromise. The preceding sketch of their work is a basic result of that compromise. [75] "The taxonomy is one step toward making it possible to gather such data from which strong knowledge claims might ultimately result."[76]

PART III: CLASSROOM OBSERVATION SYSTEMS IN THE PREPARATION OF SCHOOL PERSONNEL

The influence of classroom observation systems in programs for the preparation of school personnel has been difficult to assess. Undoubtedly, many teacher education programs have undergone change as a result of new information acquired from classroom observation systems. An assessment of their impact may be premature in view of the fact that observation systems have had their greatest use in research and the results of that research have just begun to be made available to practitioners. Consequently, it is the intent of this part of the paper to present a limited review of ways in which classroom observation systems can contribute to the preparation of school personnel.

The Role of the Affective Domain

Perhaps the greatest contribution of classroom observation systems can be made in undergraduate professional courses in the teacher education curriculum by helping preservice teachers understand the role of affective classroom climate in teaching and learning. Some of the most conclusive evidence that classroom climate can significantly affect both academic achievement and student behavior was provided by Flanders.[77] His research indicated that classroom achievement was significantly related to indirect teacher influence (affective influence) on students. As a result of the influence, which restricts the freedom of the student, more effective learning and a lower incidence of behavioral problems have been observed.

A considerable number of research projects have been conducted to investigate the relationship between classroom climate and achievement. Sandefur, accepting the assumption that there was a direct relationship between the academic achievement of students and the amount of indirect influence exerted by the teacher, conducted research to determine whether

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[75] Ibid., p. 149.

[76] Ibid., p. 153.

[77] Flanders, "Some Relationships."

undergraduate preservice teachers could be trained to use indirect influence in the classroom.[78] Using a classroom interaction analysis system, a modification of the Flanders system developed by Hough,[79] in conjunction with video tapes and live classroom observation, he found that undergraduate preservice teachers who were instructed in the use of indirect influence demonstrated significantly different classroom teaching behavior from students in a control group. The experimental students were rated by unbiased, independent observers as significantly more effective teachers than were their control group counterparts.

In a follow-up study conducted to assess the effects of a year's teaching experience on the teaching behavior of both the experimental and the control group, Sandefur found that student teachers instructed in the use of indirect influence had significantly expanded the use of indirect teacher influence when compared with the control teachers.[80] He concluded that experiences in the classroom tended to confirm the use of indirect influence.

From the research cited, it is apparent that there is growing evidence that the climate of the classroom is improved when the teacher is cognizant of the role of the affective and when the teacher exerts predominately indirect influence on the students. It is equally apparent that a classroom observation system such as interaction analysis can serve effectively as an instructional tool, to be used primarily to identify desirable teaching behavior and to sensitize preservice teachers to its uses.

Various systems of interaction analysis have been used with video tapes of teaching-learning situations. Many teacher education instructors have made use of microteaching in the preparation of teachers. Microteaching in its simplest form is little more than giving preservice teachers an opportunity to teach a group of students, sometimes peers, for short periods of time. Often video tapes are used to provide a feedback of the microteaching experience wherein the student can analyze his own teaching behavior. Increasing numbers of institutions are training

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[78] J. T. Sandefur and others, Professional Education for Secondary Teachers, Final Report, USOE Cooperative Research Project (Emporia: Kansas State Teachers College Press, July 1967).

[79] John Hough, "An Observational System for the Analysis of Classroom Instruction," Interaction Analysis: Theory, Research and Application, Edmund Amidon and John B. Hough, editors (Reading, Massachusetts: Addison-Wesley Publishing Co., 1967), pp. 150-57.

[80] J. T. Sandefur and others, Teaching Experience as a Modifier of Teaching Behavior, Final Report, USOE, Project No. 8-F-027 (Emporia: Kansas State Teachers College, August 1969).

preservice teachers in the use of interaction analysis as an aid in the evaluation of their teaching effectiveness.

The greatest contribution of classroom observation systems to programs for the preparation of school personnel is their provision for a systematic means for quantifying teaching behavior. Moreover, there is a flexibility in most systems which permits additions to or substitutions of categories which enable the researcher to quantify those teaching behaviors with which he may be concerned.

Stated another way, classroom observation systems provide the vehicle for measurement of teaching behavior---a vehicle which has not long been available to the teaching profession. Due to the diversity of the categories in the numerous systems developed to this point, it appears that the vehicle is more important than the specific categories the various systems contain.

The paradox of classroom observation systems is that while the profession now has the tools for quantifying teaching behavior, there is no generally accepted criteria for what constitutes effective teaching behavior. This paradox, hopefully, will be solved through the use of classroom observation systems in carefully controlled research. Already the results of research using classroom observation systems have focused the attention of teacher education on the importance of the affective climate of the classroom. Indirect teacher influence as a teaching behavior is receiving unprecedented acceptance in the teaching profession, and numerous teacher education programs have included it as one of the skills to be acquired by preservice teachers.

A major challenge of the next decade will be to develop more unanimity in the profession as to what constitutes effective teaching behavior and to develop the categories for observation systems which both quantify and qualify these behaviors.

PART IV: SUMMARY AND CONCLUSIONS

Summary

A number of classroom observation systems has become available to teacher educators recently, most of them within the past decade. It has become generally acceptable to classify them into one of three types: 1. affective systems, 2. cognitive systems, and 3. multidimensional systems.

Although much of the early developmental work in affective systems was done by H. H. Anderson and John Withall, the system developed by Ned Flanders has become the best known and most widely used of all observation

systems. The Flanders system, utilizing only ten categories, has been modified and expanded by other researchers. The Verbal Interaction Category System (VICS) developed by Edmund Amidon and Elizabeth Hunter is basically the Flanders system expanded to provide more detailed information. Affective systems have been developed by Robert L. Spaulding, Marie Hughes, and others.

Cognitive observation systems developed by Arno A. Bellack, B. O. Smith, and M. O. Meux are among the best known. Multidimensional systems have been developed by Robert L. Spaulding, Fred K. Honigman, Medley and Mitzel, David G. Ryans, and Openshaw and Cyphert.

Common characteristics of all classroom observation systems, whether affective, cognitive, or multidimensional, are that they require an observer who employs a systematic method of recording teacher and student behaviors. Most, but not all, observation systems limit observation to verbal behavior.

The primary impact of classroom observation systems to date has been their use as a research tool because of their objectivity. Secondary impact has been in teacher education programs in which preservice teachers are exposed to observation systems, particularly classroom interaction analysis, as a means of sensitizing them to specific teaching behaviors, such as those encompassed by the term "indirect teacher influence."

Classroom observation systems are also being used in conjunction with preservice laboratory activities, variously called microteaching, macroteaching, role playing, etc. These preservice teaching experiences are often video-taped, and an observation system is employed to provide feedback for the prospective teacher.

Perhaps a less obvious but highly important contribution of classroom observation systems has been their influence in moving teacher education programs away from the traditional theory-oriented courses of professional education and toward laboratory-oriented courses with early teaching experiences and contact with students.

Conclusions

An examination of classroom observation systems and their uses in preparing school personnel has led the authors to draw the following general conclusions:

1. Classroom observation systems have received their greatest usage by researchers and have not yet achieved widespread usage in either preservice or inservice teacher education programs.
2. The best known observation systems and those receiving the most widespread use are those dealing with the affective climate of the classroom.

3. Classroom observation systems can be used profitably in conjunction with microteaching, and role playing, and other preservice laboratory teaching experiences to provide feedback for teachers in training.
4. Classroom observation systems, with their emphasis on teaching behaviors, have exerted an influence in teacher education programs leading to more laboratory experiences in the preservice program.
5. Classroom observation systems concerned with the affective climate of the classroom are contributing to the "humanization" of teaching through their emphasis on indirect teacher influence.

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